

Attorney Docket No. 129250-002099/US
IN THE U.S. PATENT AND TRADEMARK OFFICE

APPLICANT(S): Arnab DAS et al. CONF. NO.: 3832
APPL. NO.: 10/002,746 ART UNIT: 2618
FILED November 2, 2001 EXAMINER: Thuan T. NGUYEN
ENTITLED: VARIABLE RATE CHANNEL QUALITY
FEEDBACK IN A WIRELESS COMMUNICATION
SYSTEM

APPELLANTS' BRIEF ON APPEAL

MAIL STOP APPEAL BRIEF - PATENTS

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February 13, 2008

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APPELLANTS' BRIEF ON APPEAL

I. REAL PARTY IN INTEREST:

The real party in interest in this appeal is Lucent Technologies Inc. Assignment of the application was submitted to the U.S. Patent and Trademark Office and recorded at Reel 012354, Frame 0991.

II. RELATED APPEALS AND INTERFERENCES:

There are no known appeals or interferences that will affect, be directly affected by, or have a bearing on the Board's decision in this Appeal.

III. STATUS OF CLAIMS:

Claims 1 and 4-15 are pending in the application, with claims 1, 11 and 13 being written in independent form. Claims 2 and 3 have been canceled.

Claims 1 and 4-15 remain finally rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. patent No. 6,067,458 to Chen ("Chen") in view of U.S. Patent No. 6,044,272 to Kobylinski ("Kobylinski"). Claims 1 and 4-15 are being appealed.

IV. STATUS OF AMENDMENTS:

An Amendment After Final ("AAF") was filed on November 28, 2007. As of this date the Appellants have not received an Advisory Action from the Examiner.

V. SUMMARY OF CLAIMED SUBJECT MATTER:

(i). Overview of the Subject Matter of the Independent Claims

The present invention is directed at varying the rate at which information about the quality of a channel, between a base station and mobile device, is sent from the mobile device to the base station. More specifically, independent claim 1 reads as follows (specification citations are in parenthesis):

1. A method for transmitting channel quality information in a wireless communication system comprising at least one base station and at least one mobile station, the method comprising:

varying a rate for reporting channel quality information from a mobile station to a base station as a function of the presence or absence of a reception of a data transmission at the mobile station (page 5, lines 6-16), wherein the mobile station reports channel quality information at a first rate in the absence of a reception of a data transmission from the base station (page 5, lines 6-9; page 5, line 16 to page 6, line 5; and page 6, line 26 to page 7, line 16) and, upon detection of a reception of a data transmission from the base station, the mobile station reports channel quality information at a second rate for a prescribed duration (page 5, lines 11-13; page 5, line 16 to page 6, line 5; and page 6, line 26 to page 7, line 16).

Independent claim 11 reads as follows:

11. A method for adapting the rate of reporting channel quality information in a wireless communication system including at least one base station and at least one mobile station (page 5, lines 6-16), the method comprising:

reporting channel quality information from the at least one mobile station to the at least one base station at a first rate in the absence of a reception of a data transmission at the at least one mobile station (page 5, lines 6-9; page 5, line 16 to page 6, line 5; and page 6, line 26 to page 7, line 16); and

in the presence of a reception of a data transmission at the at least one mobile station, adapting the rate for reporting channel quality information from the at least one mobile station to the at least one base station from the first rate to a second rate for a prescribed duration (page 5, lines 11-13; page 5, line 16 to page 6, line 5; and page 6, line 26 to page 7, line 16).

Independent claim 13 reads as follows:

**13. A method for transmitting channel quality information in a wireless communication system including at least one base station and at least one mobile station, the method comprising:
varying a rate for reporting channel quality information from a mobile station to a base station as a function of the number of base stations with which the mobile station is communicating** (page 9, lines 1-22).

In order to make the overview set forth above concise the disclosure that has been included, or referred to, above only represents a portion of the total disclosure set forth in the Specification that supports the independent claims.

(ii). The Remainder of the Specification Also Supports the Claims

The Appellants note that there may be additional disclosure in the Specification that also supports the independent and dependent claims. Further, by including the specification citations in parenthesis above the Appellants do not represent that this is the only evidence that supports the independent claims nor do Appellants necessarily represent that these citations alone can be used to fully interpret the claims of the present invention. Instead, the citations provide background support as an overview of the claimed subject matter.

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL:

Appellants seek the Board's review and reversal of the rejection of claims 1 and 4-15 under 35 U.S.C. §103(a) based on Chen in combination with Kobylinski.

VII. ARGUMENTS:

A. The § 103 Rejections

Claims 1 and 4-15 stand rejected under 35 U.S.C. 103(a) as unpatentable over Chen in view of Kobylinski. The Appellants respectfully disagree.

(i) Independent claim 1

With regard to Chen, in the Final Office Action ("Action") the Examiner points to col. 6, lines 10-48, as teaching "varying rate information exchange between mobile station and base station" that uses an "idle time" rate of 1/8 of the full rate while a "higher rate is used when voice or data communicating between these two components," Action at 3. The Appellants contend that this interpretation is inconsistent with the teachings of Chen as would be understood by one of ordinary skill in the art.

The Appellants contend that, as reflected in Chen's FIGS. 1A-D, while the effective transmission rate decreases through FIGS. 1A-D, there is no suggestion that the actual transmission rate, i.e., the transmission rate during the active periods designated by the shaded blocks, varies in any way.

The Appellants further contend that no teaching or suggestion has been identified in Chen with regard to the transmission of "channel quality information" as recited in claim 1. Although the Appellants agree that Chen provides for higher effective transmission rates when transmitting data or voice when considered relative to the rates used for transmitting "silence," as taught by Chen, the additional information being transmitted is the content of the message, not additional or more frequent information regarding "channel quality information."

The Appellants note that the MPEP provides:

It is important for an examiner to properly communicate the basis for a rejection so that the issues can be identified early and the applicant can be given fair opportunity to reply. Furthermore, if an initially rejected application issues as a patent, the rationale behind an earlier rejection may be important

in interpreting the scope of the patent claims. Since issued patents are presumed valid and constitute a property right, the written record must be clear as to the basis for the grant. Since patent examiners cannot normally be compelled to testify in legal proceedings regarding their mental processes it is important that the written record clearly explain the rationale for decisions made during prosecution of the application. MPEP § 706.02(j) (internal citations omitted).

The Appellants respectfully contend that the Examiner's allegations regarding the particular type of information being transmitted by Chen does not fairly communicate the logical or factual basis upon which the allegation is based. The Appellants further contend that speculation alone does not constitute a valid basis for maintaining a rejection under 35 U.S.C. § 103(a). Accordingly, the Appellants maintain that this rejection should be withdrawn as not properly supported.

With respect to Kobylinski, the Appellants again contend that Kobylinski's disclosure, as understood by one of ordinary skill in the art, does not fairly teach or suggest the transmission of "channel quality information" at different rates. In particular, the Appellants note that Kobylinski's FIGS. 1A and 1B indicate that the mobile unit reports "channel quality information" including, for example, measured RSS values, measured BER values and DVCC via a SACCH (Slow Associated Control Channel) word in response to either Measurement Order 1 or Measurement Order 2.

As reflected in Kobylinski's FIG. 2, the SACCH word 52 is present in each slot 50 of each frame 40. Accordingly, the Appellants contend that no teaching has yet been identified in Kobylinski that would suggest to one of ordinary skill in the art that "channel quality information" is being transmitted at different rates during idle periods when compared with data transmission periods. Indeed, the Appellants contend that, according to the teachings of Kobylinski, one of ordinary skill in the art would understand the mobile unit to be providing "channel quality information" at a substantially constant rate in response to either of the Measurement Orders generated by the base station.

The Appellants further note that claim 1 requires that the mobile station report “channel quality information at a first rate in the absence of a reception of a data transmission from the base station”. The Appellants contend that according to Kobylinski, the mobile station only reports “channel quality information” in response to a command from the base station.

Accordingly, the Appellants contend that the proposed combination of Chen and Kobylinski is insufficient to teach or suggest each of the elements of claim 1.

(ii) Dependent claims 4 and 5

With respect to claims 4 and 5, the Appellants incorporate the discussion provided above with respect to claim 1 and the deficiencies of the proposed combination of Chen and Kobylinski. The Appellants maintain that no teaching or suggestion has yet been identified that would suggest that the increase in the effective transmission rate illustrated by Chen translates into an increased transmission rate of “channel quality information.” Accordingly, in addition to their dependence from claim 1, the Appellants contend that claims 4 and 5 are separately allowable over the applied references.

(iii) Dependent claim 6

With respect to claim 6, the Appellants incorporate the discussion provided above with respect to claim 1 and the deficiencies of the proposed combination of Chen and Kobylinski. The Appellants maintain that no teaching or suggestion has yet been identified that would suggest that the increase in the effective transmission rate illustrated by Chen translates into any variation in the transmission rate of “channel quality information” as claimed or faster during transmission of data. Accordingly, in addition to its dependence from claim 1, the Appellants contend that claim 6 is separately allowable over the applied references.

(iv) Dependent claims 7-10

With respect to claims 7-10, the Appellants incorporate the discussion provided above with respect to claim 1 and the deficiencies of the proposed combination of Chen and Kobylinski. The Appellants maintain that no teaching or suggestion has yet been identified that would suggest that the increase in the effective transmission rate illustrated by Chen translates into an increased transmission rate of “channel quality information.” Accordingly, the Appellants contend that these claims are allowable at least in light of their dependence from claim 1.

(v) Claims 11-15

With respect to claims 11 and 12 and 13-15, the Appellants incorporate the discussion provided above with respect to claim 1 and the deficiencies of the proposed combination of Chen and Kobylinski with regard to claims 1-10. The Appellants maintain that no teaching or suggestion has yet been identified that would suggest that the increase in the effective transmission rate illustrated by Chen translates into an increased transmission rate of “channel quality information” as recited in both claim 11 and claim 13. The Appellants contend, therefore, that these claims are allowable over the applied references for at least the reasons detailed above.

Conclusion:

Accordingly, Appellants respectfully request that the members of the Board reverse the decision of the Examiner, withdraw the rejections and allow claims 1 and 4-15.

APPELLANTS' BRIEF ON APPEAL
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The Commissioner is authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 50-3777 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,
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VIII. CLAIMS APPENDIX

1. A method for transmitting channel quality information in a wireless communication system comprising at least one base station and at least one mobile station, the method comprising:

varying a rate for reporting channel quality information from a mobile station to a base station as a function of the presence or absence of a reception of a data transmission at the mobile station, wherein the mobile station reports channel quality information at a first rate in the absence of a reception of a data transmission from the base station and, upon detection of a reception of a data transmission from the base station, the mobile station reports channel quality information at a second rate for a prescribed duration.

2-3. (CANCELED)

4. The method according to claim 1, wherein, upon detection of a reception of a data transmission from the base station, the mobile station reports channel quality information at a plurality of rates over a prescribed time period after detection of the reception of a data transmission, wherein the plurality of rates are different than the first rate.

5. The method according to claim 4, wherein the prescribed time period includes a plurality of time intervals such that the channel quality information is reported at different ones of the plurality of rates during different ones of the plurality of time intervals.

6. The method according to claim 1, wherein the second rate is faster than the first rate.

7. The method according to claim 1, further comprising the step of estimating channel quality at the base station while the mobile station is reporting at the second rate, wherein estimated channel quality is used to derive a transmission format for a subsequent transmission.

8. The method according to claim 7, wherein the transmission format includes one or more parameters selected from the group consisting of modulation format, number of codes, and transmission rate.

9. The method according to claim 1, further comprising the step of estimating channel quality at the base station while the mobile station is reporting at the second rate, wherein estimated channel quality is used to calculate an amount of redundancy needed for a retransmission of a previous data transmission.

10. The method according to claim 1, wherein the channel quality information comprises a transmission rate calculated by the mobile station based on one or more channel conditions.

11. A method for adapting the rate of reporting channel quality information in a wireless communication system including at least one base station and at least one mobile station, the method comprising:

reporting channel quality information from the at least one mobile station to the at least one base station at a first rate in the absence of a reception of a data transmission at the at least one mobile station; and

in the presence of a reception of a data transmission at the at least one mobile station, adapting the rate for reporting channel quality information from the at least one mobile station to the at least one base station from the first rate to a second rate for a prescribed duration.

12. The method according to claim 11, wherein the second rate is faster than the first rate.

13. A method for transmitting channel quality information in a wireless communication system including at least one base station and at least one mobile station, the method comprising:

varying a rate for reporting channel quality information from a mobile station to a base station as a function of the number of base stations with which the mobile station is communicating.

14. The method according to claim 13, wherein the mobile station reports channel quality information at a first rate when the mobile station is communicating with one base station and wherein the mobile station reports channel quality information at a second rate when the mobile station is communicating with a plurality of base stations.

15. The method according to claim 14 wherein the second rate is faster than the first rate..

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.